

WHAT IS CLAIMED IS:

1. A method of fabricating a grating device which comprises an optical waveguide and a grating formed in said optical waveguide along a longitudinal direction thereof, comprising:

a first step of irradiating a refractive index change inducing light on said optical waveguide through a phase grating mask positioned at a side of said optical waveguide so as to satisfy a first relative arrangement relation among said optical waveguide; and

a second step of irradiating the refractive index change inducing light on said optical waveguide through said phase grating mask shifted, while said phase grating mask is shifted along the longitudinal direction of said optical waveguide by a distance of one half of a grating period  $M$  ( $M$ : odd number) of said phase grating mask so as to satisfy a second arrangement relation different from the first arrangement relation among said optical waveguide.

2. A method according to claim 1, wherein an irradiation amount of the refractive index change inducing light in said first step is approximately equal to that of the refractive index change inducing light in said second step.

3. A method according to claim 1, wherein said first step and said second step are alternately repeated two or more times.

4. A method according to claim 3, wherein the number of times that said first step is repeated is equal to the number of times that said second step is repeated.

5. A method according to claim 3, wherein an irradiation amount of the refractive index change inducing light in said first step is not changed every time said first step is repeated, and an irradiation amount of the refractive index change inducing light in said second step is not changed every time said second step is repeated.

6. A method according to claim 3, wherein an irradiation amount of the refractive index change inducing light in said first step is changed every time said first step is repeated, and an irradiation amount of the refractive index change inducing light in said second step is changed every time said second step is repeated.

7. A grating device fabricated by a method according to claim 1, comprising:

an optical waveguide; and

a grating formed in said optical waveguide along a longitudinal direction thereof.

8. An optical communication system, comprising:

an optical transmission line; and

a grating device disposed at a predetermined position of said optical transmission line.